

# Magnetic Sensor MSK5000 SA\_DS



Contactlessly measuring sensing head with integrated translation module and digital signal output. **SA\_DS version includes automation-grade, dual-shield sensor cable for special applications.** Combined with the magnetic strip MB500, the sensor establishes an open and robust measuring system with very high resolution and a sensing distance of up to 2.0 mm.



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**Features:**

- Resolution up to 0.001mm
- Freely programmable parameters (e.g., resolution) via optical interface
- Status LED display
- Real-time signal processing
- Scale MB500 (linear) / MR500 (radial)
- Reference signal fixed or periodic
- Robust metal housing

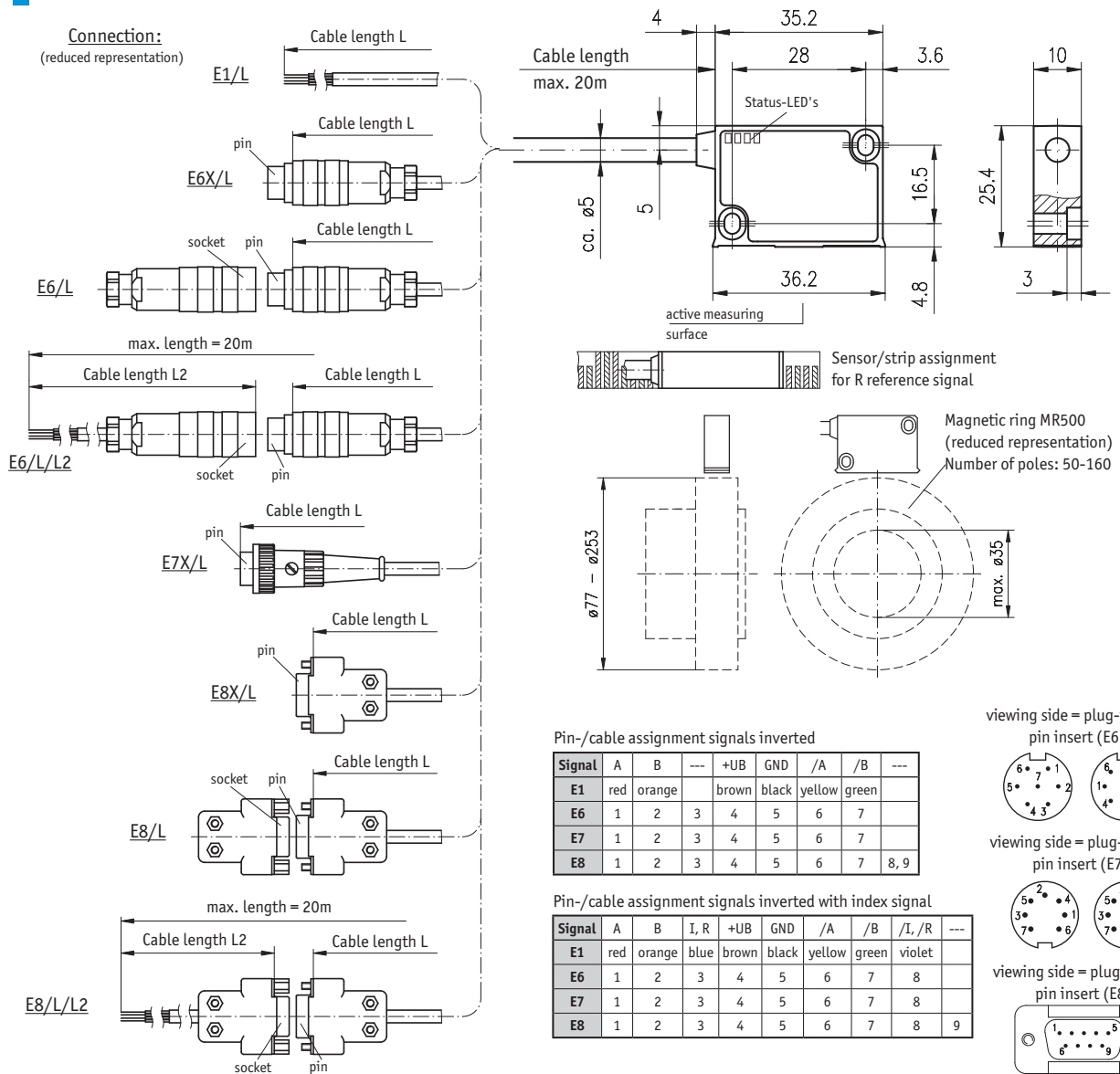
| Resolution mm       | Travel speed in m/s |       |       |       |       |        |        |        |         |
|---------------------|---------------------|-------|-------|-------|-------|--------|--------|--------|---------|
|                     | 0.01                | 0.03  | 0.05  | 0.10  | 0.20  | 0.32   | 0.80   | 1.60   | 4.00    |
| 0.001               | 0.01                | 0.03  | 0.05  | 0.10  | 0.20  | 0.32   | 0.80   | 1.60   | 4.00    |
| 0.005               | 0.06                | 0.13  | 0.25  | 0.50  | 1.00  | 1.60   | 4.00   | 8.00   | 20.00   |
| 0.010               | 0.12                | 0.25  | 0.50  | 1.00  | 2.00  | 3.20   | 8.00   | 16.00  | 25.00   |
| 0.025               | 0.30                | 0.63  | 1.25  | 2.50  | 5.00  | 8.00   | 20.00  | 25.00  | 25.00   |
| 0.050               | 0.61                | 1.25  | 2.50  | 5.00  | 10.00 | 16.00  | 25.00  | 25.00  | 25.00   |
| 0.100               | 1.21                | 2.50  | 5.00  | 10.00 | 20.00 | 25.00  | 25.00  | 25.00  | 25.00   |
| Pulse interval (µs) | 66.00               | 32.00 | 16.00 | 8.00  | 4.00  | 2.50   | 1.00   | 0.50   | 0.20    |
| Count, frequ. (kHz) | 3.79                | 7.81  | 15.63 | 31.25 | 62.50 | 100.00 | 250.00 | 500.00 | 1250.00 |

| Feature                        | Order text | Additional information                              |
|--------------------------------|------------|---|
| Operating voltage              | 10         | 6.5VDC ... 30VDC                                    |
|                                | 11         | 4.75VDC ... 6VDC                                    |
| Connection                     | E1         |   |
|                                | E6X        |   |
|                                | E6         |   |
|                                | E7X        |   |
|                                | E8X        |   |
|                                | E8         |   |
| Cable length L (in m)          | ...        | max. 20m  |
| Cable length L2 (in m)         | ...        | L + L2 = max. 20m                                   |
| Output circuit                 | PP         | push pull   |
|                                | LD         | line driver   |
| Reference signal               | 0          | without   |
|                                | I          | periodic index                                      |
|                                | R          | reference fixed                                     |
| Resolution linear/radial scale | 0.001/1250 |   |
|                                | 0.005/250  |   |
|                                | 0.010/125  |   |
|                                | 0.025/50   |   |
|                                | 0.050/25   |   |
|                                | 0.1/12.5   |   |
| Pulse interval µs              | 1.00       | standard , options: 0.2; 0.5; 2.5; 4; 8; 16; 32; 66 |

Note: The internal translation module can generate fast counting pulses, the lengths of which are limited by the pulse interval. The follower electronics must be adjusted accordingly. Select the pulse interval in advance, if necessary.

Your ordering: MSK5000 - A - B - C - D - E - F - G - H - SA\_DS

# Magnetic Sensor MSK5000 SA\_DS



**Technical data**

**Mechanical data:**

|              |                            |
|--------------|----------------------------|
| Housing      | ABS black                  |
| Sensor cable | PUR, drag chain-compatible |

**Electrical data:**

|                               |                                      |
|-------------------------------|--------------------------------------|
| Power supply                  | 6.5VDC ... 30VDC<br>4.75VDC ... 6VDC |
| Power consumption             | <25mA without load                   |
| Output signals                | A; /A; B; /B; I; /I or R; /R         |
| Realtime requirements         | real-time signal processing          |
| Index mark                    | periodic, fixed                      |
| Interference protection class | 3                                    |
| Test mark                     | CE                                   |

**Environmental conditions:**

|                     |                                 |
|---------------------|---------------------------------|
| Working temperature | -10°C ... +70°C                 |
| Storage temperature | -30°C ... +80°C                 |
| Humidity            | 100% rF, condensation permitted |
| Type of protection  | IP67                            |

**System data:**

|                           |  |
|---------------------------|--|
| Pole length               | 5mm  |
| Travel speed              | depending on resolution and pulse interval |
| System accuracy           | ±0,025mm                                   |
| Repeat accuracy           | max. ±10µm                                 |
| Sensor/magnetic strip gap | 0.1 - 2.0mm                                |
|                           | 0.1 - 1.5mm                                |

**Additional information**

Special application, automation-grade

reference signal 0 + I  
reference signal R